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1. (previously presented) Method of recording information in units on a record carrier having a track for consecutively recording the information units at addressable locations, the information being represented in the track by series of marks of different runlengths between a minimum runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not occur in the series of marks and comprise at least one long mark of at least the maximum runlength, said method comprising:

(a) encoding at least one information unit into a modulated signal comprising signal elements corresponding to said marks,

(b) scanning said track up to a link position before a selected one of said addressable locations, and

(c) recording the modulated signal from the link position,

(d) the modulated signal is provided at the begin and/or at the end with a link signal element corresponding to a link mark of at most the minimum runlength.

2. (currently amended) Method of recording information in units on a record carrier having a track for consecutively recording the information units at addressable locations, the information being represented in the track by series of marks of different runlengths between a minimum runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not occur in the series of marks and comprise at least one long mark of at least the maximum runlength, said method comprising:

(a) encoding at least one information unit into a modulated signal comprising signal elements corresponding to said marks,

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- 22 **(b) scanning said track up to a link position before a selected one of said addressable**
23 **locations, and**
24 **(c) recording the modulated signal from the link position,**
 (d) the modulated signal is provided at the begin and/or at the end with a link signal element
 corresponding to a link mark of at most the minimum runlength~~Method as claimed in~~
 ~~claim 1,~~

-wherein the link signal element corresponds to a mark shorter than the minimum runlength.

- 1 3. (previously presented) Device for recording information in units on a record carrier having a
2 track for consecutively recording the information units at addressable locations, the information
3 being represented in the track by series of marks of different runlengths between a minimum
4 runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not
5 occur in the series of marks and comprise at least one long mark of at least the maximum
6 runlength, said device comprising
7 encoding means for encoding at least one information unit into a modulated signal
8 comprising signal elements corresponding to said marks, and
9 recording means for scanning said track up to a link position before a selected one of said
10 addressable locations and recording the modulated signal from the link position,
11 the encoding means are arranged for providing the modulated signal at the begin and/or
12 at the end with a link signal element corresponding to a link mark of at most the minimum
13 runlength.

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14 4. (currently amended) Device for recording information in units on a record carrier having a
15 track for consecutively recording the information units at addressable locations, the information
16 being represented in the track by series of marks of different runlengths between a minimum
17 runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not
18 occur in the series of marks and comprise at least one long mark of at least the maximum
19 runlength, said device comprising

- 20 • encoding means for encoding at least one information unit into a modulated signal
21 comprising signal elements corresponding to said marks, and
- 22 • recording means for scanning said track up to a link position before a selected one of
23 said addressable locations and recording the modulated signal from the link position,
- the encoding means are arranged for providing the modulated signal at the begin
and/or at the end with a link signal element corresponding to a link mark of at most
the minimum runlength~~Device as claimed in claim 3,~~

wherein said runlengths are expressed in steps of a channel bit, and the encoding means are arranged for providing the link signal element corresponding to a link mark one channel bit shorter than the minimum runlength.

5. (previously presented) Device as claimed in claim 3, wherein the encoding means comprise synchronizing means for providing said at least one long mark in the synchronizing pattern at a runlength longer than the sum of the maximum runlength and the runlength of the link mark.

1 6. (currently amended) Device for recording information in units on a record carrier having a
2 track for consecutively recording the information units at addressable locations, the information

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being represented in the track by series of marks of different runlengths between a minimum runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not occur in the series of marks and comprise at least one long mark of at least the maximum runlength, said device comprising

- encoding means for encoding at least one information unit into a modulated signal comprising signal elements corresponding to said marks, and
 - recording means for scanning said track up to a link position before a selected one of said addressable locations and recording the modulated signal from the link position,
 - the encoding means are arranged for providing the modulated signal at the begin and/or at the end with a link signal element corresponding to a link mark of at most the minimum runlength
- ~~Device as claimed in claim 3,~~

wherein the encoding means comprise synchronizing means for providing the synchronizing pattern having said at least one long mark followed by a short mark of a runlength shorter than the maximum runlength, and the encoding means are arranged for providing a second link signal element after the link signal element at the begin of the modulated signal, the second link signal element corresponding to a mark differing from the short mark.

7. (previously presented) Device as claimed in claim 3, wherein the encoding means comprise means for variably selecting one out of a set of fixed linking sequences that each start with the link signal element followed by further signal elements for recording marks up to a first synchronizing pattern, substantially half of the linking sequences of the set having an odd number of mark boundaries.

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1 8. (previously presented) Device for recording information in units on a record carrier having a
2 track for consecutively recording the information units at addressable locations, the information
3 being represented in the track by series of marks of different runlengths between a minimum
4 runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not
5 occur in the series of marks and comprise at least one long mark of at least the maximum
6 runlength, said device comprising
7 encoding means for encoding at least one information unit into a modulated signal
8 comprising signal elements corresponding to said marks, and
9 recording means for scanning said track up to a link position before a selected one of said
10 addressable locations and recording the modulated signal from the link position,
11 the encoding means are arranged for providing the modulated signal at the begin and/or
12 at the end with a link signal element corresponding to a link mark of at most the minimum
13 runlength,
14 wherein the encoding means comprise means for variably selecting one out of a set of
15 fixed linking sequences that each start with the link signal element followed by further signal
16 elements for recording marks up to a first synchronizing pattern, substantially half of the linking
17 sequences of the set having an odd number of mark boundaries ,
18 wherein the linking sequences have a fixed length of 8 channel bits, and the set of fixed
19 linking sequences comprises 10100000 and 10100100, or 10010000 and 10010010, each 1
20 indicating a mark boundary.

9. (previously presented) Device as claimed in claim 3, wherein the device comprises means
compressing digital or analog input signals into units of information.

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10. (previously presented) The device of claim 9, wherein the input signals are audio and/or video signals.

11. (previously presented) Device as claimed in claim 4, wherein the encoding means comprise synchronizing means for providing said at least one long mark in the synchronizing pattern at a runlength longer than the sum of the maximum runlength and the runlength of the link mark.

12. (previously presented) A record carrier produced by the method of claim 1.

13. (previously presented) A method comprising:

encoding an information unit;

forming a recording signal of signal elements, the recording signal containing: a linking signal element, a synchronizing pattern of signal elements, and the encoded information unit;

selecting an addressable location on the track of a record carrier;

scanning the track up to a link position before the selected addressable location, and

recording the recording signal as marks corresponding to the signal elements and starting at the link position, the marks having different run lengths, the marks representing the

information unit having run lengths that vary from a minimum run length to a maximum

runlength, the pattern of marks representing the synchronizing pattern not occurring in the marks

representing the information unit and including a long mark of at least the maximum runlength,

the mark representing the link signal element having a run length of at most the minimum

runlength.

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1 14. (previously presented) A recording device comprising:

2 encoding means for encoding at least one information unit, and for variably selecting one
3 out of a set of fixed linking sequences that each start with a link signal element followed by
4 further signal elements, and for providing a recording signal of signal elements, the recording
5 signal containing the selected linking sequence, a synchronizing pattern, and the encoded
6 information unit: and

7 recording means for selecting an addressable location in the track of a record carrier, and
8 for scanning said track up to a link position before the selected addressable location and for
9 recording the recording signal starting at the link position, the marks having different run
10 lengths, the marks representing the information unit having run lengths that vary from a
11 minimum run length to a maximum runlength, the pattern of marks representing the
12 synchronizing pattern not occurring in the marks representing the information unit and including
13 a long mark of at least the maximum runlength, the mark representing the link signal element
14 having a run length of at most the minimum runlength.

1 15. (previously presented) Method of recording information in units on a record carrier having a
2 track for consecutively recording the information units at addressable locations, the information
3 being represented in the track by series of marks of different runlengths between a minimum
4 runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not
5 occur in the series of marks and comprise at least one long mark of at least the maximum
6 runlength, said method comprising:

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(a) encoding at least one information unit into a modulated signal comprising signal elements corresponding to said marks,

(b) scanning said track up to a link position before a selected one of said addressable locations, and

(c) recording the modulated signal from the link position,

(d) the modulated signal is provided at the begin and/or at the end with a link signal element corresponding to a link mark of at most the minimum runlength,

wherein:

the runlengths are expressed in steps of a channel bit, and the link signal element is one channel bit shorter than the minimum runlength;

the at least one long element in the synchronizing pattern has a runlength longer than the sum of the maximum runlength and the runlength of the link element;

in the synchronizing pattern the at least one long element is followed by a short element of a runlength shorter than the maximum runlength;

the recording signal includes a first link signal element at the beginning of the recording signal and a second link signal element immediately following the first link signal element, the second link signal element having a different runlength than the first link signal element;

the method further comprises variably selecting one out of a set of fixed linking sequences that each start with the link signal element followed by further signal elements, the further signal elements being immediately followed by a first synchronizing pattern, and substantially half of the linking sequences of the set having an odd number of element boundaries;

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the linking sequences have a fixed length of 8 channel bits, and the set of fixed linking sequences including 10100000 and 10100100, or 10010000 and 10010010, each 1 indicating a element boundary; and

the method further comprises processing or compressing digital or analog input signals such as audio and/or video into units of information.

16. (previously presented) A method comprising:

encoding an information unit;

variably selecting one out of a set of fixed linking sequences that each start with a link signal element followed by further signal elements;

forming a recording signal of signal elements, the recording signal containing: the selected linking sequence, a synchronizing pattern, and the encoded information unit;

selecting an addressable location on the track of a record carrier;

scanning the track up to a link position before the selected addressable location, and

recording the recording signal as marks corresponding to the signal elements and starting at the link position, the marks having different run lengths, the marks representing the

information unit having run lengths that vary from a minimum run length to a maximum

runlength, the pattern of marks representing the synchronizing pattern not occurring in the marks

representing the information unit and including a long mark of at least the maximum runlength,

the mark representing the link signal element having a run length of at most the minimum

runlength, the linking sequences each have a fixed length of 8 channel bits, the set of fixed

linking sequences being selected from: a first set including 10100000 and 10100100; and a

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second set including 10010000 and 10010010; wherein each 1 indicating a mark boundary and the number of 0's between 1's indicating the run length between mark boundaries.

17. (previously presented) A recording device comprising:

encoding means for encoding at least one information unit, and for variably selecting one out of a set of fixed linking sequences that each start with a link signal element followed by further signal elements, and for providing a recording signal of signal elements, the recording signal containing the selected linking sequence, a synchronizing pattern, and the encoded information unit: and

recording means for selecting an addressable location in the track of a record carrier, and for scanning said track up to a link position before the selected addressable location and for recording the recording signal starting at the link position, the marks having different run lengths, the marks representing the information unit having run lengths that vary from a minimum run length to a maximum runlength, the pattern of marks representing the synchronizing pattern not occurring in the marks representing the information unit and including a long mark of at least the maximum runlength, the mark representing the link signal element having a run length of at most the minimum runlength, the linking sequences each have a fixed length of 8 channel bits, the set of fixed linking sequences being selected from: a first set including 10100000 and 10100100; and a second set including 10010000 and 10010010; wherein each 1 indicating a mark boundary and the number of 0's between 1's indicating the run length between mark boundaries.

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18. (withdrawn) A sequence of electromagnetic signals for recording on optical media and comprising:

- a linking section comprising a link signal element for generating a short link mark, which linking section is substantially shorter than a frame in length;
- a synchronizing section, following the link section and comprising a synchronizing signal element for generating a long synchronizing mark;
- other signals, after the synchronizing section, for generating marks that have runlengths in a given range;

the short link mark, the long synchronizing mark and the given range being such that the short link mark — when concatenated with the longest possible mark in the given range — will generate a mark shorter than the long synchronizing mark, whereby minor errors in placement of the linking section over pre-recorded data will not result in accidental creation of a concatenated mark that could be confused with the long synchronizing mark.

19. (withdrawn) The sequence of claim 18 further comprising

a second linking section, after the other signals, which second linking section is also substantially smaller than a frame in length and comprises a second link signal element for generating a second short link mark, such that the recording of the other signals, in combination with data previously recorded, does not result in a concatenated mark that would mimic the long synchronizing mark and would be situated at the end of the marks generated by the sequence.

20. (withdrawn) The sequence of claim 18, wherein

- the link signal element comprises a channel bit sequence of “101”;

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- the synchronizing signal element comprises a transition bit sequence of 14 channel bits.

21. (withdrawn) The sequence of claim 18, wherein the linking section is short enough to be compatible with CD-R, CD-RW, DVD, and DVD-RW.

22. (withdrawn) A sequence of electromagnetic signals formatted for recording on optical media comprising:

- a synchronizing section comprising a synchronizing signal element for generating a long synchronizing mark;
- other signals, after the synchronizing section, for generating information marks that have runlengths that are shorter than the long synchronizing mark;
- a link section comprising a link signal element for generating a short link mark immediately after the last information mark, which short link mark is no longer than the shortest information mark, which link section is substantially shorter than a frame in length, so that the recording of the other signals, in combination with data previously recorded, does not result in a concatenated mark that would mimic the long mark and would be situated at the end of the sequence, so that false synchronization is avoided.

23. (previously presented) Method of recording information in units on a record carrier having a track for consecutively recording the information units at addressable locations, the information being represented in the track by series of marks of different runlengths between a minimum runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not

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5 occur in the series of marks and comprise at least one long mark of at least the maximum
6 runlength, said method comprising:

7 (a) encoding at least one information unit into a modulated signal comprising signal
8 elements corresponding to said marks,

9 (b) scanning said track up to a link position before a selected one of said addressable
10 locations, and

11 (c) recording the modulated signal from the link position,

12 (d) the modulated signal is provided at the begin and/or at the end with a link signal
13 element corresponding to a link mark of at most the minimum runlength,

14 wherein the link signal element is part of a linking section having a total length substantially less
15 than the length of a frame and sufficiently short to be compatible with CD-R, CD-RW, DVD,
16 and DVD-RW.

1 24. (previously presented) Device for recording information in units on a record carrier having a
2 track for consecutively recording the information units at addressable locations, the information
3 being represented in the track by series of marks of different runlengths between a minimum
4 runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not
5 occur in the series of marks and comprise at least one long mark of at least the maximum
6 runlength, said device comprising

7 encoding means for encoding at least one information unit into a modulated signal
8 comprising signal elements corresponding to said marks, and

9 recording means for scanning said track up to a link position before a selected one of said
10 addressable locations and recording the modulated signal from the link position,

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the encoding means are arranged for providing the modulated signal at the begin and/or at the end with a link signal element corresponding to a link mark of at most the minimum runlength,

wherein the link signal element is part of a linking section having a total length substantially less than the length of a frame and sufficiently short to be compatible with CD-R, CD-RW, DVD, and DVD-RW.

25. (previously presented) A method comprising:

encoding an information unit;

forming a recording signal of signal elements, the recording signal containing: a linking signal element, a synchronizing pattern of signal elements, and the encoded information unit;

selecting an addressable location on the track of a record carrier;

scanning the track up to a link position before the selected addressable location, and

recording the recording signal as marks corresponding to the signal elements and starting at the link position, the marks having different run lengths, the marks representing the information unit having run lengths that vary from a minimum run length to a maximum runlength, the pattern of marks representing the synchronizing pattern not occurring in the marks representing the information unit and including a long mark of at least the maximum runlength, the mark representing the link signal element having a run length of at most the minimum runlength,

wherein the link signal element is part of a linking section having a total length substantially less than the length of a frame and sufficiently short to be compatible with CD-R, CD-RW, DVD, and DVD-RW.

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1 26. (previously presented) A recording device comprising:

2 encoding means for encoding at least one information unit, and for variably selecting one
3 out of a set of fixed linking sequences that each start with a link signal element followed by
4 further signal elements, and for providing a recording signal of signal elements, the recording
5 signal containing the selected linking sequence, a synchronizing pattern, and the encoded
6 information unit: and

7 recording means for selecting an addressable location in the track of a record carrier, and
8 for scanning said track up to a link position before the selected addressable location and for
9 recording the recording signal starting at the link position, the marks having different run
10 lengths, the marks representing the information unit having run lengths that vary from a
11 minimum run length to a maximum runlength, the pattern of marks representing the
12 synchronizing pattern not occurring in the marks representing the information unit and including
13 a long mark of at least the maximum runlength, the mark representing the link signal element
14 having a run length of at most the minimum runlength,

15 wherein the link signal element is part of a linking section having a total length
16 substantially less than the length of a frame and sufficiently short to be compatible with CD-R,
17 CD-RW, DVD, and DVD-RW.

1 27. (previously presented) Method of recording information in units on a record carrier having a
2 track for consecutively recording the information units at addressable locations, the information
3 being represented in the track by series of marks of different runlengths between a minimum
4 runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not

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5 occur in the series of marks and comprise at least one long mark of at least the maximum
6 runlength, said method comprising:

7 (a) encoding at least one information unit into a modulated signal comprising signal
8 elements corresponding to said marks,

9 (b) scanning said track up to a link position before a selected one of said addressable
10 locations, and

11 (c) recording the modulated signal from the link position,

12 (d) the modulated signal is provided at the begin and/or at the end with a link signal
13 element corresponding to a link mark of at most the minimum runlength,

14 wherein the information units are organized into ECC units and the method further comprises
15 recording the link signal element at the end of the last C1 code word of the previous ECC unit.

28. (previously presented) The method of claim 27, wherein the link position is after byte 178 of
the last C1 code word.

29. (previously presented) The method of claim 27, further comprising introducing a small
random shift of the link position to improve direct overwrite cycles.

1 30. (previously presented) Method of recording information in units on a record carrier having a
2 track for consecutively recording the information units at addressable locations, the information
3 being represented in the track by series of marks of different runlengths between a minimum
4 runlength and a maximum runlength and synchronizing patterns of marks, which patterns do not

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5 occur in the series of marks and comprise at least one long mark of at least the maximum
6 runlength, said method comprising:

7 (a) encoding at least one information unit into a modulated signal comprising signal
8 elements corresponding to said marks,

9 (b) scanning said track up to a link position before a selected one of said addressable
10 locations, and

11 (c) recording the modulated signal from the link position,

12 (d) the modulated signal is provided at the begin and/or at the end with a link signal
13 element corresponding to a link mark of at most the minimum runlength,

14 wherein the link position is placed 8 channel bits before a boundary between ECC blocks.

31. (previously presented) The method of claim 23, wherein the link mark is selected from a
pre-determined set of linking sequences that each start with a link mark followed by a predefined
but different number of mark boundaries.

1 32. (new) A method for recording a record carrier, the carrier comprising at least one track
2 embodying a consecutive recording of information units at addressable locations, the information
3 units including representations of information and synchronizing patterns, which synchronizing
4 patterns do not occur in the representations of the information, the method comprising recording
5 modulated at least first and second information units such that

- 6 • the information units comprise at least first and second information units,
- 7 • the second information unit is recorded later than the first information unit,

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- one of the first and second information units begins or ends with a linking section for preventing false synchronization,
- the linking section lies entirely within a single word of the recorded information, and
- the linking section has a particular physical format that, when combined with recordations recorded prior to the second information unit, avoids mimicking a given pattern present in the synchronization patterns.

33. (new) The method of claim 32, wherein

the information is represented in the track by series of marks of different runlengths between a minimum runlength and a maximum runlength and synchronizing patterns of marks, the synchronizing patterns of marks do not appear in the other information, the given pattern comprises at least one long mark of at least the maximum runlength, and the particular physical format is a characteristic runlength that, when combined with other marks in the recordations, does not yield the maximum runlength.

34. (new) A method for recording a record carrier, the carrier comprising at least one track embodying a consecutive recording of information units at addressable locations, the information units including representations of information and synchronizing patterns, which synchronizing patterns do not occur in the representations of the information, the method comprising recording at least one modulated information unit such that the last word of the information unit is replaced at least in part with a linking portion, which linking portion lies entirely within the information unit and has a particular physical format that, when combined with other recordations, avoids

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8 mimicking a given pattern present in the synchronization patterns, so that at least a second
9 information unit can be immediately adjacent to the information unit in the track, without any
10 necessity of a separate linking section between the information unit and the second information
11 unit.

1 35. (new) The method of claim 34, wherein

2 the information is represented in the track by series of marks of different runlengths
3 between a minimum runlength and a maximum runlength and synchronizing patterns of marks,
4 the synchronizing patterns of marks do not appear in the modulated information unit,
5 the given pattern comprises at least one long mark of at least the maximum runlength,
6 and

7 the particular physical format is a characteristic runlength that, when combined with
8 other marks in the recordations, does not yield the maximum runlength.

1 36. (new) The method of claim 34, wherein the linking portion is recorded by intentionally
2 corrupting and shortening a last word of a block to be recorded, by replacing a last part of the last
3 word by the linking portion.

1 37. (new) The method of claim 34, wherein recording is aborted before the end of the word
2 containing the linking portion to avoid destroying a sync signal of a subsequent but earlier
3 recorded block.

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1 38. (new) A device for recording record carrier, the carrier comprising at least one track
2 embodying a consecutive recording of information units at addressable locations, the information
3 units including representations of information and synchronizing patterns, which synchronizing
4 patterns do not occur in the representations of the information, the device comprising:

- 5 • means for receiving and encoding information units;
- 6 • means for recording at least one modulated information unit such that the last word of
7 the information unit is replaced at least in part with a linking portion, which linking
8 portion lies entirely within the information unit and has a particular physical format
9 that, when combined with other recordations, avoids mimicking a given pattern
10 present in the synchronization patterns, so that at least a second information unit can
11 be immediately adjacent to the information unit, without the necessity of a separate
12 linking section before the second information unit.

1 39. (new) The device of claim 38, wherein

2 the information is represented in the track by series of marks of different runlengths
3 between a minimum runlength and a maximum runlength and synchronizing patterns of marks,
4 the synchronizing patterns of marks do not appear in the modulated information unit,
5 the given pattern is at least one long mark of at least the maximum runlength, and
6 the particular physical format is a characteristic runlength that, when combined with
7 other marks in the recordations, does not yield the maximum runlength.

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1 40. (new) The device of claim 38, wherein the recording means is adapted to record the linking
2 portion by intentionally corrupting and shortening a last word of a block to be recorded, by
3 replacing a last portion of the last part of the word by the linking portion.

1 41. (new) The device of claim 38, wherein the recording means is adapted to abort recording
2 before the end of the word containing the linking portion to avoid destroying a sync signal of a
3 subsequent but earlier recorded block.